Utah Department of Transportation
Construction
Manual of Instruction
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CHAPTER 8:

TRAFFIC CONTROL AND SAFETY

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Precast Concrete Barrier

General

After April 1, 2002, use devices and systems that meet NCHRP-350 Report crash test requirements as defined in the four categories by the Federal Highway Administration. Some exceptions will be acceptable as stated below.

A. Category 3: Portable/Temporary pre-cast concrete barrier manufactured after October 1, 2002 must be certified as meeting NCHRP – 350 Report test requirements.

1. Manufactured date to be stamped into top of each barrier section using a numeric format (ex: 10/2002) with 2 inch x 2 inch numerals, ¼ inch deep. See BA series Standard Drawings.

2. Portable/Temporary pre-cast concrete barrier manufactured prior to October 1, 2002 and meeting NCHRP 230 may be used until they are no longer serviceable. Refer to Standard Specification 01554.

The inspector must check upon arrival to the project that the materials conform to the plans and specifications and are designed as shown in the Standard Drawings. They are placed on a firm foundation, which has been compacted to density requirements and brought to required grade. Concrete surfaces, which are to receive the barriers, are swept or flushed clean of sand and stone. The sections are securely attached to each other per plan details. The Inspector records the accepted quantity placed and verifies the required Certificates of Compliance are in the project file.

Beam Guardrail and Double Guardrail

General

Since Guardrail is expensive to construct and requires continual maintenance, it is constructed only where conditions justify its use. During construction the Resident Engineer investigates eliminating the need for guardrail by flattening the slopes, removing, relocating or modifying the hazard whenever possible. The Region Traffic Engineer will determine final evaluation of the need for guardrail in concurrence with the Resident Engineer and the Project Manager.

For Safety reasons the guardrail end are flared away from the roadway and anchored in accordance with the appropriate Specification. The Inspector pays particular attention to make sure that the rail washers are consistent with the current Standard Drawings and Specification. In some cases end sections or

impacted attenuators are added to the ends of barrier sections to cushion the impact or redirect an errant vehicle. These devices are installed according to the manufacturers recommendations and when repair is necessary, only product specific parts should be used.

The pavement centerline is established to align the guardrail post. Steel posts are generally driven but may be augered and wood posts are either augered or driven. After the posts have been placed in auger holes they are backfilled and surfacing completed as specified. Posts are set plum, spaced as specified and the top of the posts set to the design elevation. Rail laps are in the direction of vehicular travel and post block assembly is correctly installed.

The inspector records the accepted lengths and locations of the guardrail sections and verifies that the required tests and certificates of compliance are available in the project file.

Traffic Control Cable

General

Inspector records the accepted lengths and locations of the cables and verifies that the required tests and certifications of compliance are available in the project files. The cable system is place according to the Standard Drawings.

Barrier Reflector

General

The Inspector records the accepted number of reflectors and verifies that the required certifications of compliance are available in the project files. Reflectors are included in the price of the barrier and no additional payment is necessary. Additional reference can be found in the Standard Drawings.

Traffic Sign

General

Inadequate signing detracts from the quality of the project. Misplaced or irregular usage of signs on interchanges creates a critical hazard to traffic and hinders the proper operation of the facility. Today's destination sign has increased in size to the extent that it is no longer a minor installation problem. Close cooperation between all forces on highway construction projects is vital when installing an average freeway sign to assure proper signing when the facility is opened to traffic.

A. Sign Replacement

A sign, which is being replaced, is not to be removed until the new sign is placed and uncovered.

B. Sign Location

Since it is impossible to visualize the actual physical features of final grade elevations, vertical curves, trees and other factors that effect proper sign placement in the initial sign plan stage, it becomes necessary to make adjustments in sign location just prior to installation. The Resident Engineer and Region Traffic Engineer should coordinate a study of each location to determine that each sign will be in the most efficient location for visibility and nighttime reflectivity. Advance Destination signs (1 mile or ½ mile) may be moved up to 500 feet in either direction if severe ground or slope conditions are encountered. If the sign must be moved more than 500 feet, consideration is given to revising the distance on the sign. The Contractor stakes all sign locations prior to installation. The Contractor is responsible for determining the proper elevation and orientation of all signs and sign structures.

C. Approval of Materials

All materials for installation on permanent signing project will conform to the Specifications. If no special design is involved, the Resident Engineer approves them. Shop drawings for overhead sign structures are submitted to the Resident Engineer in triplicate for approval prior to fabrication.

Delineator

General

The Inspector records the accepted number of delineators and verifies that the required certificates of compliance are available in the project files.

Removal of Pavement Markings

General

Unnecessary pavement markings are eradicated before traffic changes. Traffic movement is influenced to a great extent by pavement markings; therefore, misleading markings can be a significant contributing cause of traffic accidents. Additionally, temporary pavement markings should be placed where the raveled path has been changed and where traffic is to operate on new pavement overlays. Traffic should not be allowed to use the roadway before the old pavement markings are eradicated.

Traffic Control Maintainer

General

The Contractor provides the Resident Engineer with name and telephone number of a representative responsible for emergency correction of the devices. The Resident Engineer will likewise provide the Contractor with the name of the department designated Traffic Control Manager and telephone number. A joint review with the Contractor can be mutually beneficial. Both day and night reviews of the traffic control devices are made and documented by the Contractor's Traffic Control Maintainer and verified by the department's designated Traffic Control Manager using UDOT Construction Form C-110A.

Work Zone Traffic Control Devices

General

Construction operations may inconvenience people who live along the right-of-way as well as those who must travel through a project. Anything the Contractor can do to minimize this annoyance will improve public relations.

All projects require a Traffic Control Plan (TCP). The TCP is a part of the contract plans or if specified, is provided by the Contractor under Standard Specification 01554. The Contractor is responsible for implementation and documentation of the TCP. The Resident Engineer monitors the work of the Contractor in this regard and assures required traffic controls are established at the start of the project and are properly maintained and operated during the time the situation exists. The controls are to remain in place only as long as necessary and are immediately removed thereafter. Where operations are performed in stages, only those devices pertinent to that particular stage are used to avoid confusing the motorist. The number and type of devices used are recorded on UDOT Construction Form C-110 & C-110A.

Instead of implementing the adopted TCP elements in the contract, the Contractor can choose to develop alternate measures, if they can more expeditiously achieve the required results. Contractor's developed TCP's are subject to approval by the Region Traffic Engineer and FHWA where applicable and meet the minimum requirements of the MUTCD. A change order will be issued for this contract change.

All aspects of the traffic plan, including signing, barricading, flagging, traffic handling and blockading of streets are discussed, explained and coordinated with appropriate local officials, especially when urban projects are involved. Traffic control is administered in the same manner as any other contract item. The Contractor is expected to be aware of specific contract requirements necessary to meet the terms of the contract.

In May 1998, Senate Bill 20 which increased penalties for speeding in construction/maintenance work zones went into effect. The Construction Speed Zone Law outlines the work zone signs that are required for enforcement. It is recommended the law be enforced on all projects. However, for projects that are currently active, the Contractor and Resident Engineer will decide if the law needs to be enforced. They will need to consider the safety of everyone working on or traveling through the project, the type of work being performed, time remaining to complete the project, etc. When the decision is to enforce the law, the Resident Engineer can prepare a change order for furnishing and placing the signs. The Traffic Control Supplemental Specifications has been modified to include the cost of furnishing and placing these signs on future projects.

The Resident Engineer determines, before permitting work operations to start or to continue, that the Contractor has provided and properly erected the necessary and required barricades and warning signs, with flaggers, if required, to adequately warn the traveling public of any obstruction in the road or work operations that may be hazard to traffic. Advance warning is required in construction operations to alert drivers in time for them to become aware of conditions ahead before entering the work area. Signing channelization devices are shown in the Standard Drawings.

During periods of suspension of work operations, the Contractor is required to furnish and maintain those traffic control devices required by the contract and approved by the Resident Engineer for protection of the work and safety and convenience of the traveling public.

Flagging and Pilot Car Operation

General

The public's impression of a project is greatly influenced by its flagging operations. The Resident Engineer should insist that the flag-person be neat, courteous and efficient. A rude, discourteous or lazy flag-person will create a potentially dangerous condition. One of the primary rules for all flag-persons is to dress with official clothing and accessories. A flag-person must be currently certified by the department and utilize proper flagging procedures.

Proper positioning of the flagging operations is important to the safety of the public, the Contractor's and the department's work force and the personal safety of the flag-person.

Advance Warning Arrow Panel

General

Advance Warning Arrow Panel is adequately covered in Standard Specification 01554. Documentation of the hours is recorded in a miscellaneous book daily, signed and agreed to by the Contractor at the end of each day.